

What is claimed is:

- 1 1. A dual-sided flat panel display structure,
2 comprising:
 - 3 two sets of light source modules;
 - 4 two polarizing plates between the light source modules;
 - 5 a first and second substrates between the polarizing
6 plates;
 - 7 a driving array at an inner side of the first
8 substrate; and
 - 9 light valve device between the first substrate and
10 second substrates.
- 1 2. The structure as claimed in claim 1, further
2 comprising a color filter between the polarizing plates.
- 1 3. The structure as claimed in claim 1, wherein
2 screen sizes on either side thereof are the same or
3 different.
- 1 4. The structure as claimed in claim 1, wherein the
2 flat panel display is a liquid crystal display (LCD).
- 1 5. The structure as claimed in claim 1, wherein the
2 driving array comprises a thin film transistor (TFT) array.
- 1 6. The structure as claimed in claim 1, wherein the
2 driving array comprises a passive matrix driving array.
- 1 7. The structure as claimed in claim 1, wherein the
2 driving array comprises a thin film diode (TFD) array.

1 8. The structure as claimed in claim 1, wherein the
2 flat panel display is a STN-LCD.

1 9. The structure as claimed in claim 1, wherein the
2 flat panel display is an organic light-emitting diode (OLED)
3 display.

1 10. The structure as claimed in claim 1, wherein the
2 flat panel display is an electrophoresis display.

1 11. The structure as claimed in claim 1, wherein the
2 light source modules are provided by the same light source.

1 12. The structure as claimed in claim 1, wherein the
2 light source modules are provided by different light
3 sources.

1 13. The structure as claimed in claim 1, wherein the
2 light source of the light source modules is LEDs.

1 14. The structure as claimed in claim 1, wherein the
2 light source of the light source modules is cold cathode
3 fluorescent lamps.

1 15. The structure as claimed in claim 1, wherein the
2 light source comprises red light, blue light, and green
3 light.

1 16. The structure as claimed in claim 1, wherein the
2 light source comprises yellow light, magenta light, and cyan
3 light.

1 17. The structure as claimed in claim 1, wherein the
2 light source is white light source.

1 18. An operating method of a dual-sided flat panel
2 display having a first and second light source modules, two
3 substrates between the first and second light source
4 modules, and a driving array on an inner side of the first
5 substrate, comprising:

- 6 (a) lighting the first light source module;
- 7 (b) outputting a first image signal from the driving
8 array to control a first display of a first
9 image;
- 10 (c) switching off the first light source module,
11 followed by lighting the second light source
12 module;
- 13 (d) outputting a second image signal from the driving
14 array to control a second display of a second
15 image;
- 16 (e) switching off the second light source module,
17 followed by lighting the first light source
18 module; and
- 19 (f) repeating steps (b) through (e).

1 19. The method as claimed in claim 18, wherein the
2 driving array comprises a of thin film transistor (TFT)
3 array.

1 20. The method as claimed in claim 18, wherein the
2 driving array comprises a passive matrix driving array.

1 21. The method as claimed in claim 18, wherein the
2 driving array comprises a thin film diode (TFD) array.

1 22. The method as claimed in claim 18, wherein the
2 flat panel display is a STN-LCD.

1 23. The method as claimed in claim 18, wherein the
2 flat panel display is an organic light-emitting diode (OLED)
3 display.

1 24. The method as claimed in claim 18, wherein the
2 flat panel display is an electrophoresis display.

1 25. The method as claimed in claim 18, wherein the
2 first and second light source modules are provided by the
3 same light source.

1 26. The method as claimed in claim 18, wherein the
2 first and second light source modules are provided by
3 different light sources.

1 27. The method as claimed in claim 18, wherein the
2 light source of the light source modules is LEDs.

1 28. The method as claimed in claim 18, wherein the
2 light source of the light source modules is cold cathode
3 fluorescent lamps.

1 29. The method as claimed in claim 18, wherein the
2 light source is white light source.

1 30. The method as claimed in claim 18, wherein the
2 light source comprises red, blue, and green light.

1 31. The method as claimed in claim 18, wherein the
2 light source comprises yellow, magenta, and cyan light.

1 32. The method as claimed in claim 18, wherein the
2 length of time the first and second light source modules are
3 lit is less than 24 milliseconds.

1 33. The method as claimed in claim 18, wherein a ratio
2 of the length of time the first light source module is lit
3 to that of the second light source module is between 3 and
4 1/3.

1 34. The method as claimed in claim 18, wherein the
2 first and second signals display different images.

1 35. The method as claimed in claim 18, wherein a
2 reaction time of a liquid crystal molecule is shorter than
3 20 milliseconds when using white light as a light source.

1 36. The method as claimed in claim 18, wherein a
2 reaction time of a liquid crystal molecule is shorter than
3 10 milliseconds when using red, blue, and green light as
4 light sources.

1 37. The method as claimed in claim 18, wherein the
2 first and second signals display images using imaging
3 sequential technology.

1 38. The method as claimed in claim 18, wherein the
2 first and second signals display images using color
3 sequential technology.